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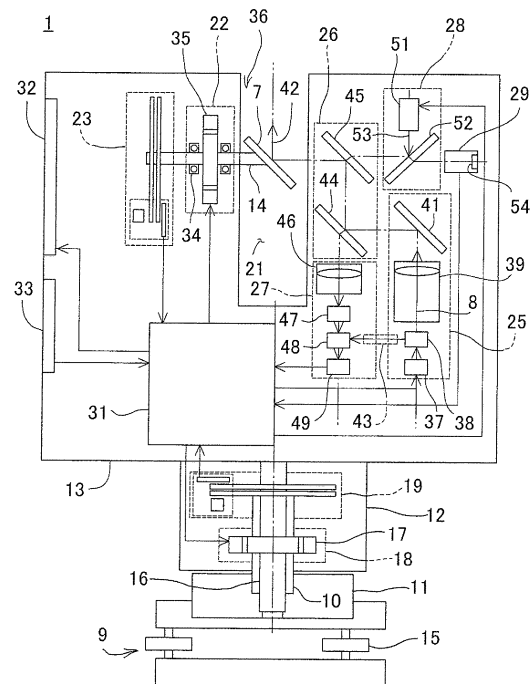
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(54) **Three-dimensional measuring device and three-dimensional measuring system**

(57) A three-dimensional measuring device includes a light source unit 37 for generating a distance measuring light 8, a light projecting optical unit 39 for projecting the distance measuring light from the light source unit on a distance measuring optical axis 42, a light receiving optical unit 46 for receiving a reflected light from an object to be measured, a light receiving element 49 for converting the reflected light condensed by the light receiving optical unit into an electric signal, a scanning unit 36 for scanning the distance measuring light over the object to be measured, an angle detector 19, 23 for detecting an projecting direction of the distance measuring light scanned by the scanning unit, an illumination light source unit 51 for projecting an illumination light having a plurality of wavelengths, an image pickup unit 29 for acquiring two-dimensional images of the plurality of wavelengths and a control arithmetic unit 31, wherein the control arithmetic unit comprises a distance data processing unit for controlling a drive of the scanning unit, for calculating a distance to the object to be measured based on a received light signal from the light receiving element, and for calculating a three-dimensional data of the object to be measured based on a calculated distance and a detection signal from the angle detector and an image data processing unit for acquiring an image illuminated with the illumination light source unit and an unilluminated image by the image pickup unit, for acquiring a difference image based on both images, for detecting a retroreflective target based on the difference image and a detected intensity of a reflected light having a plurality of wave-

lengths detected from the difference image, and for calculating a position of the target.

**FIG. 2**





## EUROPEAN SEARCH REPORT

 Application Number  
 EP 13 18 8772

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* page 1, lines 9-19 *	10-14	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)  G01C
Place of search <b>The Hague</b>		Date of completion of the search <b>26 November 2014</b>	Examiner <b>Kuhn, Robert</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

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ANNEX TO THE EUROPEAN SEARCH REPORT  
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